

Serial No. 10/699,698

Docket No.: 1614.1372

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1-6 and 10-12, in accordance with the following:

1. (CURRENTLY AMENDED) A loss point detecting method for determining whether or not a loss point occurs in an optical transmission path, in a distributed Raman amplifier which amplifies a signal light ~~with a use of~~ using the optical transmission path as an amplifying medium, by applying an excitation light to the optical transmission path in a first direction opposite to a second direction in which the signal light is transmitted ~~there through the~~ optical transmission path, comprising the steps of:

- a) ~~monitoring a power of~~ scattered light separating from the optical transmission path;
- b) separating a part of the excitation light and monitoring ~~the power of the separated part of the excitation light~~;
- e) separating a reflected light which passes in ~~a the~~ the second direction, opposite to the first direction in which the excitation light passes through the optical transmission path, and monitoring ~~the power of the separated, reflected light~~; and
- e) determining, when ~~a the~~ the monitored power of the separated part of the excitation light ~~monitored~~ reaches a predetermined determination value, whether or not a loss point occurs, based on a ratio between ~~a the~~ the monitored power of the scattered light ~~monitored~~ and ~~a the~~ the monitored power of the separated, reflected light ~~monitored~~.

2. (CURRENTLY AMENDED) A loss point detecting method for determining whether or not a loss point occurs in an optical transmission path, in a distributed Raman amplifier which amplifies a signal light, ~~with a use of~~ using the optical transmission path as an amplifying medium, by applying an excitation light to the optical transmission path in a first direction opposite to a second direction in which the signal light is transmitted ~~there through the~~ optical transmission path, comprising the steps of:

- a) ~~monitoring a power of~~ scattered light separating from the optical transmission path;
- b) separating a part of the excitation light and monitoring ~~the power of the separated part of the excitation light~~; and
- e) determining, when ~~a the~~ the monitored power of the excitation light ~~monitored~~ reaches a

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predetermined determination value, whether or not a loss point occurs, based on a the power of the monitored scattered light monitored.

3. (CURRENTLY AMENDED) A distributed Raman amplifier which amplifies a signal light, ~~with a use of~~ using an optical transmission path as an amplifying medium, by applying an excitation light to the optical transmission path in a first direction opposite to a second direction in which the signal light is transmitted ~~there~~ through the optical transmission path, comprising:

a scattered-light monitoring part monitoring a power of scattered light separating from the optical transmission path;

an excitation-light monitoring part separating a-part of the excitation light and monitoring ~~it~~ the power of the separated part of the excitation light;

a reflected-light monitoring part separating a reflected light which passes in a the second direction, opposite to the first direction in which the excitation light passes through the optical transmission path, and monitoring ~~it~~ the power of the separated, reflected light;

a determining part determining, when a the monitored power of the excitation light ~~monitored~~ reaches a predetermined determination value, whether or not any loss point occurs, based on a ratio between a the monitored power of the scattered light ~~monitored~~ and a the monitored power of the reflected light ~~monitored~~; and

a breaking part stopping the application applying of the excitation light when said determining part determines that a loss point occurs.

4. (CURRENTLY AMENDED) A distributed Raman amplifier which amplifies a signal light, ~~with a use of~~ using an optical transmission path as an amplifying medium, by applying an excitation light to the optical transmission path in a first direction opposite to a second direction in which the signal light is transmitted ~~there~~ through the optical transmission path, comprising:

a scattered-light monitoring part monitoring a power of scattered light separating from the optical transmission path;

an excitation-light monitoring part separating a-part of the excitation light and monitoring ~~it~~ the power of the separated part of the excitation light;

a reflected-light monitoring part separating a reflected light which passes in a the second direction, opposite to the first direction in which the excitation light passes through the optical transmission path, and monitoring ~~it~~ the power of the separated, reflected light;

a determining part determining whether or not a loss point occurs, ~~with~~ when increasing a

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power of the excitation light at a fixed rate, and comparing a time required for ~~a-the monitored~~ power of the scattered light ~~monitored-to~~ reach a fixed value with a time required for ~~a-the~~ power of the monitored reflected light ~~monitored-to~~ reach a fixed value; and

a breaking part stopping the application of the excitation light when said determining part determines that a loss point occurs.

5. (CURRENTLY AMENDED) A distributed Raman amplifier which amplifies a signal light, ~~with a use of using~~ an optical transmission path as an amplifying medium, by applying an excitation light to the optical transmission path in a first direction opposite to a second direction in which the signal light is transmitted ~~therethrough the optical transmission path~~, comprising:

a scattered-light monitoring part monitoring ~~a-power of~~ scattered light separating from the optical transmission path;

an excitation-light monitoring part separating ~~a-part of the~~ excitation light and monitoring ~~the power of the separated part of the~~ excitation light;

a determining part determining, when ~~a-the~~ power of the monitored excitation light ~~monitored-reaches~~ a predetermined determination value, whether or not any loss point occurs, based on ~~a-the monitored~~ power of the scattered light ~~monitored~~; and

a breaking part stopping the application of the excitation light when said determining part determines that a loss point occurs.

6. (CURRENTLY AMENDED) The distributed Raman amplifier as claimed in claim 3, wherein:

said determining part determines, when the power of the excitation light monitored reaches the predetermined determination value, that a loss point occurs when the ratio the power of the reflected light monitored with respect to the monitored power of the scattered light ~~monitored-exceeds~~ a predetermined value.

7. (ORIGINAL) The distributed Raman amplifier as claimed in claim 3, further comprising:

a first band separating optical coupler separating only the scattered light from the optical transmission path.

8. (ORIGINAL) The distributed Raman amplifier as claimed in claim 4, further comprising:

a first band separating optical coupler separating only the scattered light from the optical transmission path.

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9. (ORIGINAL) The distributed Raman amplifier as claimed in claim 5, further comprising:
a first band separating optical coupler separating only the scattered light from the optical transmission path.

10. (CURRENTLY AMENDED) The distributed Raman amplifier as claimed in claim ~~35~~, further comprising:
a second band separating optical coupler separating the scattered light from the signal light and scattered light separated from the optical transmission path by means of an optical coupler.

11. (CURRENTLY AMENDED) The distributed Raman amplifier as claimed in claim ~~46~~, further comprising:
a second band separating optical coupler separating the scattered light from the signal light and scattered light separated from the optical transmission path by means of an optical coupler.

12. (CURRENTLY AMENDED) The distributed Raman amplifier as claimed in claim ~~57~~, further comprising:
a second band separating optical coupler separating the scattered light from the signal light and scattered light separated from the optical transmission path by means of an optical coupler.